



Enterprise Risk Management

Fish Cost Components Workshop PBL Rate Case Risks and Risk Mitigation

Background and discussion

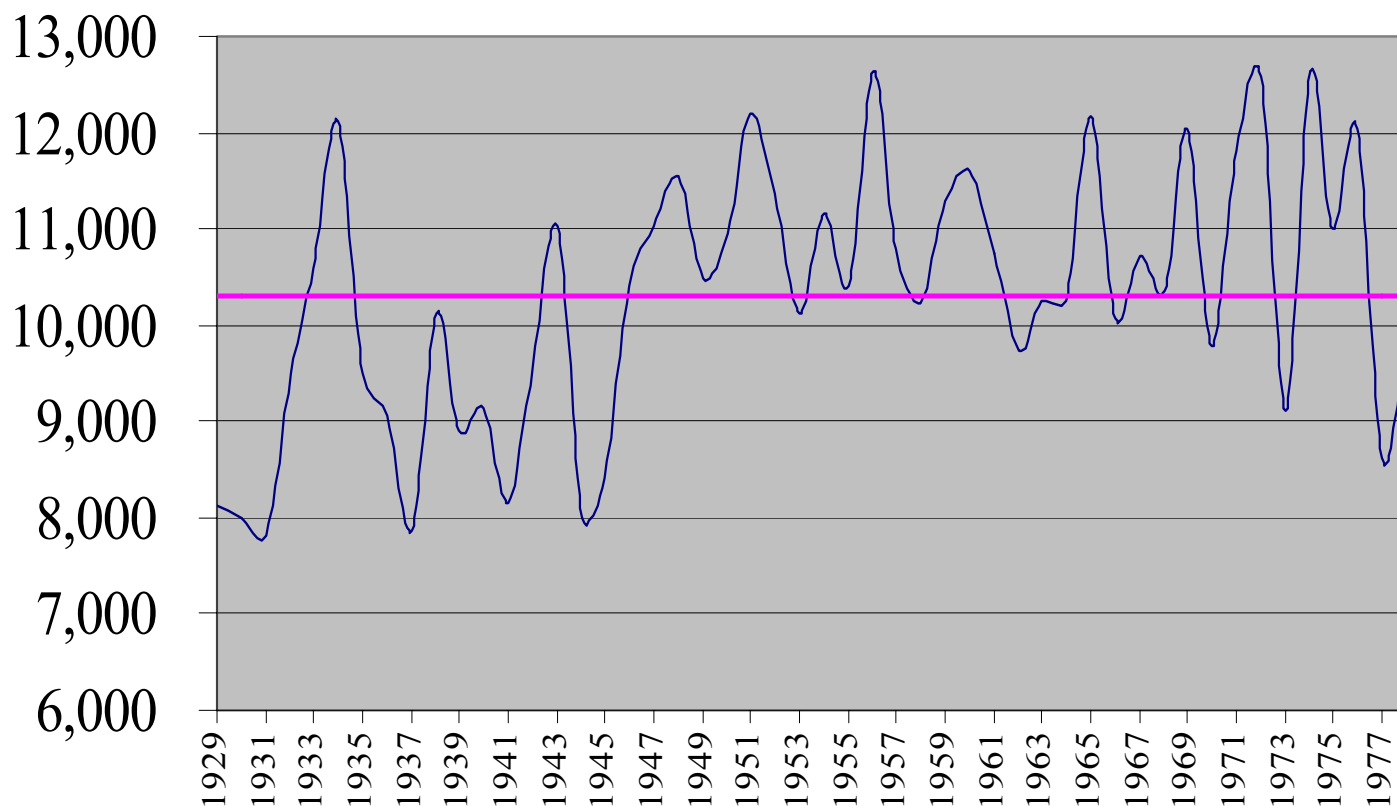
Roy Fox, BPA Enterprise Risk Manager
January 28, 2005

Pre-decisional
(for discussion only)

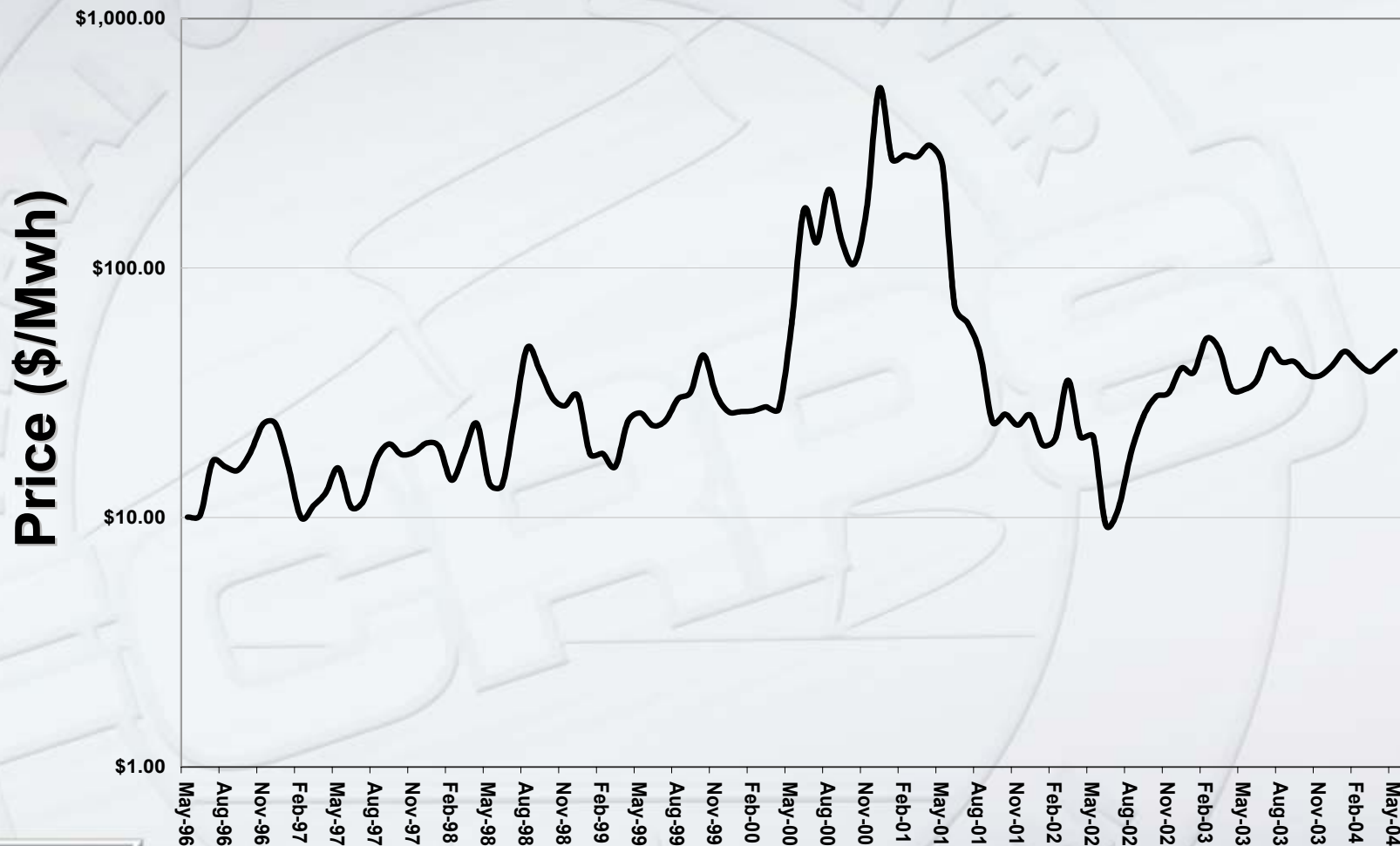
page 1

Federal Generation by Water Year

**Federal Hydro Gen. + CGS Gen.
(amw)**



MID-C MONTHLY AVERAGE PRICES FOR HLH MAY 1996 – MAY 2004



Net Secondary Energy Sales Revenue Variability

- Hydro and market price variability combine to create huge net secondary sales revenue uncertainty:
 - 2005 and 2006 PBL net sec. sales rev. ~ \$500m with a std. dev. of ~\$300m (August 18th Workshop)
 - Average market prices used (Aug. '04 SNCRAC assumptions):
\$39 - \$44 per MWh 2005-6 Std. Dev. \$14
 - Risk level varies with market price assumptions



Drivers of Power Rate Risks

- Hydro supply variability (both annual volume and seasonal shape of run-off)
- Market price variability (level and volatility)
- Fish and Wildlife costs from generation changes resulting from non-power requirements for operations
- CGS performance
- Other resource availability (wind, conservation, hydro plant performance and availability)
- Loads
- Unexpected expenses, expense overruns (“non-operating” risks)
- IOU Settlement cost variability



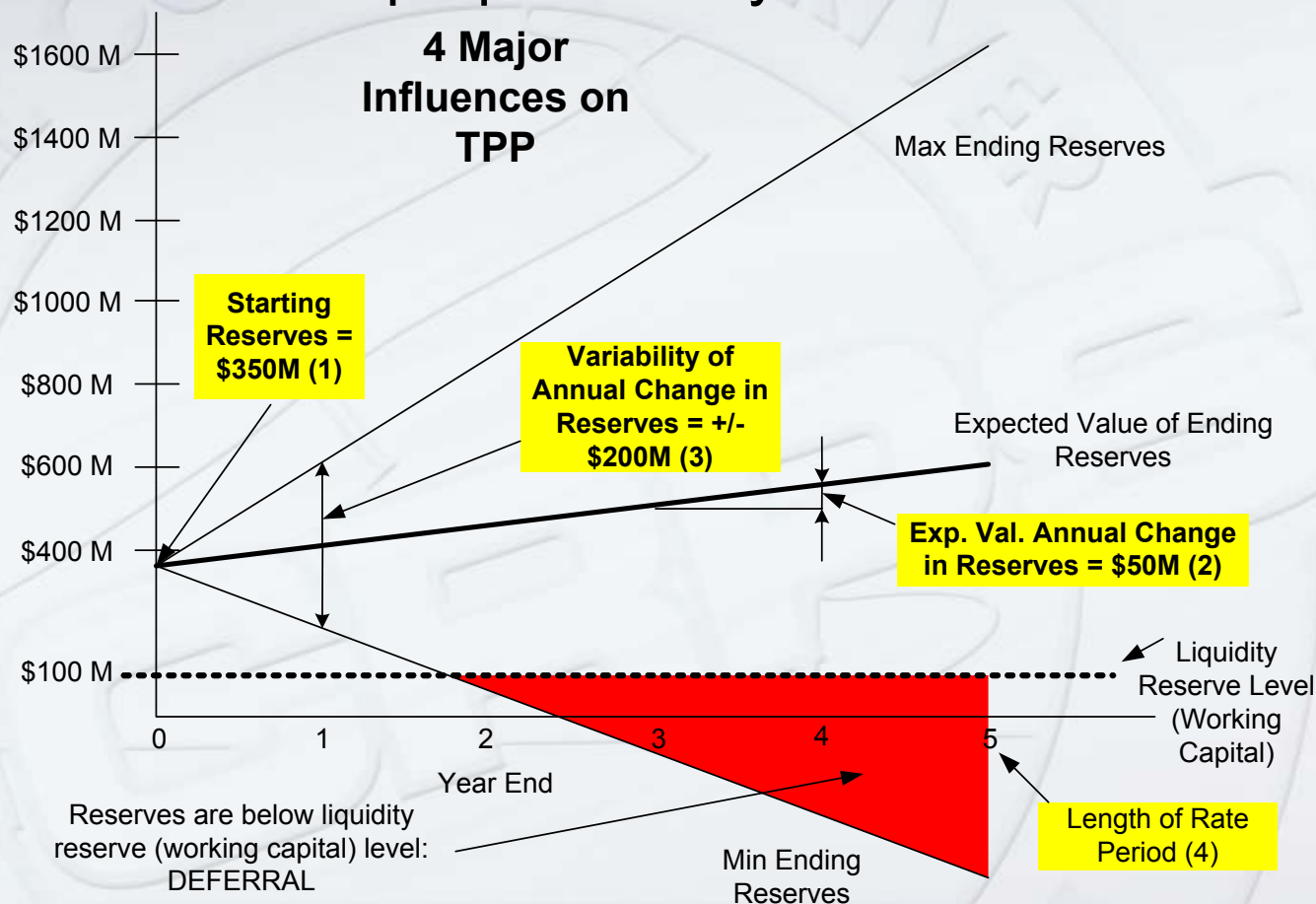
TPP: Treasury Payment Probability

- As a not-for-profit, Federal enterprise, BPA does not seek to maximize net revenue; BPA must use other financial performance measures.
- Key performance – making all scheduled payments to Treasury on time.
- High probability of making payments to Treasury has become a key financial metric.
- BPA must pay other vendors before paying Treasury; TPP measures overall financial health.



TPP Graph

(For illustration purposes only— from June 10th workshop)



Factors Affecting TPP

Currently reserves are the main protection against net revenue variability. The 4 main factors affecting TPP in a rate case are:

- 1) The starting reserve level;
- 2) The expected value of the change in reserves from one year to the next (i.e., the E.V. of BPA's cash flow);
- 3) The annual variability (risk) in BPA's cash flow;
- 4) The length of the rate period.



Tools to Mitigate Risks

- Cash Reserves
- Planned Net Revenues for Risk (increases cash reserves via increase in rates)
- Rate Design
 - Flat rates & reserves
 - Shaped rates (eg. front-load revenues or back-load costs)
 - Rebates (send rebates to customers if certain conditions occur)
 - Surcharges (raise rates if certain conditions occur)
 - Indexed rates (index the level of rate to a measurable variable)
- Potential to engage others to explore risk mitigation alternatives – cost and feasibility issues
- Length of rate period (generally less risk with shorter rate periods)

